

WHAT IS CLAIMED IS:

- 1 1. A packet data processing apparatus for processing a packet data  
2 stream received through a packet-switched network, wherein:  
3 said packet data processing apparatus comprises:  
4 a network interface unit for receiving packet data constituting  
5 said packet data stream from said packet-switched network;  
6 a buffer for temporarily storing said packets received by said  
7 network interface unit;  
8 a processing unit for sequentially reading and processing the  
9 packet data stored in said buffer; and  
10 a monitoring unit for monitoring a state of said buffer  
11 periodically;  
12 and  
13 said monitoring unit:  
14 makes said processing unit skip at least one packet data to be  
15 read and processed next by said processing unit, in the case where a  
16 number of the packet data stored in said buffer shows a tendency of  
17 increasing from a predetermined number of data, successively a given  
18 number of times; and  
19 makes said processing unit suspend operation during a period of  
20 time required for reading and processing at least one packet data, in the  
21 case where the number of the packet data stored in said buffer shows a  
22 tendency of decreasing from the predetermined number of data,  
23 successively the given number of times.  
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1     2.       The packet data processing apparatus according to Claim 1,  
2     wherein:

3             said monitoring unit periodically monitors the state of said buffer  
4     synchronously with points when said processing unit reads a packet data  
5     from said buffer;

6     and as a result,

7             when it has not finished to store a packet data, which comes after  
8     (said predetermined number of data - 1) packet data from a packet data  
9     to be read from said buffer by said processing unit, into said buffer, then,  
10    said monitoring unit judges that the number of the packet data stored in  
11    said buffer tends to decrease from the predetermined number of data;  
12    and

13            when it has finished to store packet data, which comes after said  
14    predetermined number of data from a packet data to be read by said  
15    processing unit from said buffer, into said buffer, then, said monitoring  
16    unit judges that the number of the packet data stored in said buffer tends  
17    to increase from the predetermined number of data.

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1     3.       The packet data processing apparatus according to Claim 1,  
2     wherein:

3             when said buffer underflows, said monitoring unit makes said  
4     processing unit suspend operation until packet data of said  
5     predetermined number of data are stored into said buffer; and

6             when said buffer overflows, said monitoring unit makes said  
7     processing unit skip the packet data to be read and processed next by  
8     said processing unit, by said predetermined number of data.

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1     4.       The packet data processing apparatus according to Claim 1,

2 wherein:

3 said packet data stream represents an audio signal or a video  
4 signal; and

5 the packet data stored in said buffer are sequentially read and  
6 processed in order to perform real-time reproduction of the audio signal  
7 or the video signal represented by said packet data stream received  
8 through said packet-switched network.

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1 5. A packet data processing program for processing a packet data  
2 stream received by a computer system through a packet-switched  
3 network, wherein:

4 said packet data processing program is read and executed by said  
5 computer system, to implement:

6 a buffer for temporarily storing packet data that constitute said  
7 packet data stream received through said packet-switched network;

8 a processing unit for sequentially reading and processing packet  
9 data stored in said buffer; and

10 a monitoring unit for monitoring a state of said buffer  
11 periodically;

12 on said computer system;

13 and

14 said monitoring unit:

15 makes said processing unit skip at least one packet data to be  
16 read and processed next by said processing unit, in the case where a  
17 number of the packet data stored in said buffer shows a tendency of  
18 increasing from a predetermined number of data, successively a given  
19 number of times; and

20 makes said processing unit suspend operation during a period of

21 time required for reading and processing at least one packet data, in the  
 22 case where the number of the packet data stored in said buffer shows a  
 23 tendency of decreasing from the predetermined number of data,  
 24 successively the given number of times.

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1 6. A storage medium that stores the packet data processing program  
 2 according to Claim 5 and is readable by a computer system.

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1 7. A packet data processing method for processing a packet data  
 2 stream received through a packet-switched network, comprising:

3 a storing step in which packet data constituting said packet data  
 4 stream are received from said packet-switched network and stored  
 5 temporarily in a buffer;

6 a processing step in which packet data stored in said buffer are  
 7 sequentially read and processed; and

8 a monitoring step in which a state of said buffer is monitored  
 9 periodically;

10 and

11 in said monitoring step;

12 when a number of the packet data stored in said buffer shows a  
 13 tendency of increasing from a predetermined number of data,  
 14 successively a given number of times, then, in said processing step, at  
 15 least one packet data to be read and processed next by said processing  
 16 unit is made to be skipped; and

17 when the number of the packet data stored in said buffer shows a  
 18 tendency of decreasing from the predetermined number of data,  
 19 successively the given number of times, then, processing in said  
 20 processing step is made to be suspended during a period of time required

21 for reading and processing at least one packet data.

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